

REMARKS

This RCE is filed with an Amendment in response to the final Office Action of March 21, 2008.

Claims 1-6 have been amended, claims 7-15 have been cancelled, and new claims 16-33 have been added. The Examiner will note that the limitation added in the last amendment has been removed from the claims and inserted into new claims 16 and 23. Support for new claims 16 and 23 may be found at page 6, lines 16-23 corresponding to published application US 2005/0114136 at page 2, paragraph 0015.

The new dependent claims 17-22 and 24-29 find support at page 9, lines 14-23 corresponding to the published application at page 3, paragraph 0026.

The new dependent claims 30-33 find support at page 4, lines 26-30 corresponding to page 1, paragraph 0011 of the published application 2005/0114136.

The applicant reserves the right to file divisional applications on the Group II encoder claims 7-10 and the Group III claims 11-15. These two groups relate to the second and third aspects of the present invention as set forth in the specification.

Regarding the obviousness rejection of claims 1-6, the *Wiggins* reference does not mention restoring the internal state of the audio decoder saved before starting to decode the frame including the start of the loop section.

The reason for this, as pointed out above, is the fact that *Wiggins* is not reflective of the kind of decoder that would have such a state that would be savable.

To elaborate, the *Wiggins* reference does not show a decoder such as would be used in AMR-WB wherein the decoded sample values delivered by the decoder depend not only on the input encoded stream of data but also on an internal state of the decoder which, as explained in the specification, evolves during the decoding process in state-of-the-art decoders. Because of this problem with state-of-the-art decoders such as AMR-WB decoders, a repetitive decoding of the loop section, for instance, is no longer a trivial matter, since the state of the decoder at the end of the loop is different from its state at the beginning of the loop. See page 4, lines 1-30 corresponding to page 1 of the published application 2005/0114136 at paragraphs 0010 and 0011.

The Examiner is also referred to the paragraph at page 4, line 32 through page 5, line 26 corresponding to published paragraph 0012 and 0013 on pages 1 and 2 of the published

application US 2005/0114136 where it is pointed out that decoding the loop section several times in a row during playback is difficult because of the evolving internal state of the decoder.

Moreover, *Wiggins*, even if it did have the kind of evolving state such as found in a state-of-the-art decoder, there is no hint or suggestion in *Wiggins* to store (b) same and (d) restore the stored state in combination with (a) and (c) of *Cole*. The motivation provided by the Examiner, i.e., to further reduce the data rate, is not a sufficient motivation to one of skill in the art to combine the two references to enable such a person to *realize* the advantage of the combination.

If the nature of the problem to be solved is examined, it is found to be twofold. One is the difficulty in utilizing advanced audio coders wherein the decoding process cannot be carried out independently for each sample on account of their exploitation of the correlation between audio samples in order to achieve high-compression. As a consequence, the decoded sample values delivered by such a decoder depend not only on the input encoded stream of data but also on an internal state of the decoder which evolves during the decoding process. Because of this, a repetitive decoding of a loop section is no longer a trivial matter, since the state of the decoder at the end of the loop is different from its state at the beginning of the loop.

The other, more important difficulty lies in utilizing advanced compression schemes. The difficulty arises from the fact that most of these schemes perform the encoding and decoding operations on a frame-by-frame basis, wherein a frame comprises one or more consecutive audio samples. Any manipulation of an encoded wavetable comprising attack and loop sections must therefore take into consideration that the decoder can provide only an integer number of decoded audio frames at a time. For example, the loop section of a wavetable might be distributed into several frames, and, in addition, it might be too long to be stored entirely in the decoded form into the memory. Consequently, in such a case it is necessary to decode the frames composing the loop section several times in a row as required during playback. Delivering the same decoded loop waveform every time, however, is rendered difficult by the evolving internal state of the decoder.

The *Wiggins* reference does not provide any hint or suggestion first of all of the existence and secondly on how to solve such a problem or that a combination with a prior art reference such as *Cole*, should be attempted to solve such a problem.

Even if the problem that the inventors solved included a feature of *Wiggins* (which is not admitted), since the problem that *Wiggins* solved through the use of the same feature does not deal with this problem, then there is no reason to expect that one of ordinary skill in the art

would associate this feature of *Wiggins* with the solution to the present inventors' problem as expressed in the presently claimed invention.

Again, the Examiner's motivation to combine (to further reduce the data rate) is just too vague and lacking the specificity required to provide an acceptable source of motivation. In other words, when there are existing technologies that, when combined, are the same as a claimed invention, then that combination will *always* and *necessarily* provide the same advantages as the invention (how could it be otherwise?). To conclude that an invention is obvious just because a combination of existing technologies that "arrives at" the invention also provides the same *advantage* as that invention is akin to saying that the invention is obvious because it provides the same advantage as itself. Such reasoning short-circuits the proper obviousness analysis that can be used to characterize *any* inventive combination as being obvious. Because this sort of reasoning can be applied to almost all inventions, an advantage such as the Examiner proposes (to reduce the data rate) and that it is shared with the Examiner's combination of existing technologies is incapable of distinguishing between obvious and nonobvious inventions.

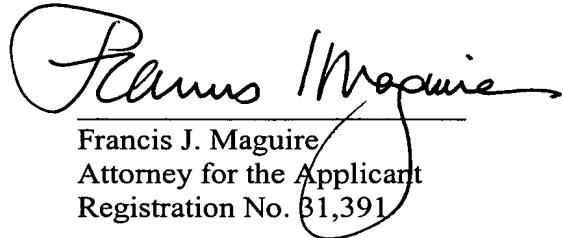
The present inventors did not invent looping and while looping allows the reduction of the memory requirements for wavetable synthesis, the problem solved by the first aspect of the present invention has to do with the matter of looping itself where side effects due to looping discontinuities need to be avoided. See page 3, lines 13-16 corresponding to paragraph 8 of published application US 2005/0114136.

Withdrawal of the obviousness rejection of claims 1-6 is requested.

Applicant also submits herewith an additional claim fee of \$200.00 for added claims. If the fee is missing or inadequate the Commissioner is authorized to deduct the fee or any shortfall from our Deposit Account No. 23-0442. In case a petition for extension of time has been overlooked, the Commissioner is requested to consider this paper to be a petition for the appropriate extension period and is authorized to deduct the appropriate extension fee from our Deposit Account No. 23-0442.

The objections and rejections of the Office Action of March 21, 2008, having been obviated by amendment or shown to be inapplicable, withdrawal thereof is requested and passage of amended claims 1-6 and new claims 16-33 to issue is earnestly solicited.

Respectfully submitted,



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